FABRICATION OF RUTHERFORD-TYPE SUPER-CONDUCTING CABLES FOR CONSTRUCTION OF DIPOLE MAGNETS,* R. M. Scanlan, J. Royet, and R. Hannaford, Lawrence Berkeley Laboratory, University of California, Berkeley, CA 94720
--- An experimental cabling machine has been constructed and used to investigate the fabrication of a variety of superconducting cables. These include the 23-strand and 30-strand NbTi alloy cables for the Superconducting Supercollider (SSC) and a number of experimental cables. The experimental cables include 24-strands and 36-strands as well as two-level cables with a 6 or 7-strand first level and 23 or 30 strand second level. These results were used to aid in selecting the optimum cable for the SSC dipole and quadrupole magnets. As a result of these studies, cable can now be fabricated to exacting mechanical tolerances (± .006 mm) and with low critical current degradation (2-5%). In addition, tooling design studies have been performed and a Prototype SSC Production Cabling machine has been designed. The results of the cable optimization studies and the tooling design studies will be discussed. SSC cable production experience on the experimental cabling machine and the production cabling machine will be reported.

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